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The physician will probably dress the eye in twenty-four hours, and a complete, sterile tray must be in readiness. The tray may consist of glass jars for irrigating cotton, boric pads, cotton pads, bandages, irrigating jar and pipette, jar of bichloride, vaseline and glass applicator, tube of isinglass plaster (ready cut), pin tray, small solution basin, kidney-shaped basin (agate), candle-stick, matches, and magnifying lens. Atropine will be used if the anterior chamber has been restored, and a bottle of sterile atropine, 1 per cent, must be at hand.

Each day after this, the dressing is renewed, and at the end of three days, if nothing has interfered with the course of the healing, the dressing is generally removed from the unoperated eye. At the end of a week or, perhaps, a little earlier, the patient needs only dark glasses. However, at bedtime, a dressing must be applied.

If at any time the nurse is called upon to assist the physician in exposing the eye-ball for inspection, she will separate the lids by placing her thumbs at the edges and draw gently backward without making pressure on the eye-ball or injuring the cornea.

Eye-patients are sometimes very depressed and low spirited, so the nurse who does this particular kind of work must be most companionable. Intelligent reading aloud, in a well modulated voice, will rarely fail to entertain the patient, and in this way the long tedious hours of convalescence may be brightened to some extent.

ELECTRO-THERAPEUTICS

(Third Paper)

By MARTIN W. CURRAN, M.D.
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Electrolysis. It is absolutely essential that our readers should become conversant with this part of the subject, as with a knowledge of the principles governing electrolysis, there is very little difficulty in mastering the whole field of electro-therapy.

It is easy to change force or energy from one form to another, and this interchange of energy constitutes the physical life of the world. The chemical energy within the cell which we described in our first paper begets electrical energy, and with this electrical energy we can, in turn, break up chemical compounds.

Heat, when applied to water, decomposes it into its component gases, hydrogen and oxygen. Chemically a substance having a strong affinity for one of the gases will unite with it, setting the other free, as when potassium takes up oxygen, setting free the hydrogen, or when chlorin gas unites with hydrogen, setting free the oxygen. An electric current, when slightly acidulated, will also decompose water. This is electrolysis, the breaking up of substances into their elements by means of electricity.

When substances are broken up into their elements by electricity, as when water is changed into its elements, hydrogen and oxygen gas, there are left behind certain products of decomposition called "ions." Following the universal law that "likes repel and opposites attract," these ions appearing at the positive pole must have been repelled by the negative and are therefore like the negative and we will call them electro-negative substances. Likewise those appearing at the negative pole we call electro-positive.

A human body weighing 150 pounds is 108 pounds water, and therefore contains oxygen and hydrogen. In the process of electrolysis the oxygen is electro-negative and collects around the positive pole, the hydrogen is electro-positive and goes towards the negative pole, and it is this affinity that gives the two poles an exactly opposite therapeutic effect.

Oxygen is an acid maker, consequently the tissues adjacent to the positive pole are rendered acid. An acid condition is against pain, because it means the beginning of death of the tissue, therefore the positive pole is called sedative.

Hydrogen is an alkali maker, therefore hydrogen collects around the negative pole and the tissues in the immediate vicinity of this pole are rendered alkaline. An alkaline condition means a case of over stimulation or irritation. All inflammations are due to an excessive alkalinity of the part. It is clearly obvious, then, that while the positive pole will alleviate an inflammatory condition, a negative application will produce a state simulating inflammation.

The positive pole, by its acidity, coagulates the albuminoids of the blood and therefore hardens or shrinks tissue. The negative pole acts like caustic soda or potassium, softening, disintegrating or liquefying tissue; so it is at once apparent that whenever it is desired to produce disintegration of tissue, such as warts, moles, or in fact, any benign growth, it is necessary to use the negative pole.

Rameau, the French musical composer, fatigued with the long discourse with which a priest accompanied the last offices, found strength enough to ask, "What is all that you are singing to me out of tune?" Our readers may also inquire, What is all that nonsense about negative and positive poles, and how are we to tell which is which? That is very simple, and also extremely important to know. Take the ends of the terminal wires that come from the cells, and immerse them in a mild salt solution, you will discover immediately that there is a difference in the action of the two wires. The wire that comes from the carbon element will throw off a few bubbles, but the wire coming from the zinc element will soon be coated with hydrogen bubbles; the same thing will occur if you connect wires to the two binding posts of a galvanic battery. The wire that becomes coated with bubbles so freely is the negative pole, and naturally the other is the positive. Now when changing the cells in a battery or regulating the wires that come from the electric light lamps or sockets, you will be able to remedy any errors that might, but should not, occur.

Ionization or Cataphoresis is an electrolytic process following closely the law of electrolysis, and is the method employed for introducing medicaments into the tissues and circulation by means of an electric current.

Ionization consists in taking advantage of a property peculiar to the galvanic current of conveying a medicament directly through the unbroken skin to that part of the body to be treated. The galvanic current dissociates drugs into ions and these ions travel always to that pole opposite to their own charge, thus, negatively charged ions travel to the positive pole and positively charged ions to the negative pole. In this manner it is possible to administer a drug directly to the actual seat of a complaint through the unbroken skin, even into the deeper parts, and with the important advantage that the ions must enter every cell through which the current passes. The effect of a medicine so administered electrolytically is far more beneficial than when introduced by hypodermic injections or other methods, and this is explained by reason that the ions have a greater activity owing to the electric charge and to the fact that they are distributed through each cell through which the current circulates and are not so easily carried away by the blood.

We can produce profound local anesthesia, through the skin, by using a solution of cocaine cataphorically and do minor surgical work, such as the removal of small growths, or the incision of an abscess, without pain to the patient.

Static electricity. Statics is that branch of mechanics which treats of the properties and relations of force in equilibrium. By equilibrium is meant that the forces are in perfect balance, so that the body upon which they act is in a state of rest. The word statics is used in opposition to dynamics, the former being the science of equilibrium or rest, the latter of motion, and both together constituting mechanics. Therefore static electricity is electricity at rest.

Amber, glass, hard rubber, and many other substances may be electrified or given a charge of electricity by rubbing them with a silk or woolen cloth, thereby causing them to attract pith balls, or other light bodies. The electricity thus developed is called static electricity. These manifestations of electricity are of the same nature as lightning, which is a discharge of electricity between two clouds or between a cloud and the earth. Static electricity is manifested principally in attractions and repulsions and violent discharges, one body being charged to a higher degree than the other, the discharge bringing about a state of equilibrium.

X-rays. Hardly a leading surgeon in the world will operate without the assistance of the X-ray in diagnosis. Now the X-rays are not electrical, but up to the present time they have never been produced without the aid of electrical energy. They are a form of radiation excited by the passage of an alternating current from an induction coil through a partial vacuum. They cause a screen coated with some phosphorescent substance, to emit light; hence the shadow cast by them becomes visible when cast on such a screen. The flesh of the human body is more transparent to them than the bones, and that is the reason why they are used to photograph the skeleton, to locate bullets, etc. It is necessary to use these rays with much care, since continued exposure to them gives rise to painful and apparently incurable hardening and ulceration of the tissues.

Our next paper will discuss the application of electricity.

NURSING TURKISH SOLDIERS

By E. F.

I arrived at the interesting city of Constantinople just after the war had broken out, and found the streets crowded with soldiers, no tram cars running, and nearly all the horses taken for the war. Every now and then a transport passed, loaded with soldiers playing their weird music, which is all in a minor key and instead of being inspiring, as our military bands, only helped to depress one.

It was hard to realize from looking at the people that one of the bloodiest wars of the world was being enacted but a short distance away, for the Turks, with the resignation of their race, give no more hint of their real feeling than the smooth surface of the Bosphorus gives of the dangerous currents beneath.

As soon as the wounded began to arrive, every available building, mosque, school, club, etc., was turned into a temporary hospital. I was asked to help care for the wounded, which I did, and found it most interesting. Having just come from a modern hospital with all the necessary appliances, plenty of surgical instruments, antiseptics, sterile water, dressing, etc., to say nothing of plenty of nurses, I had always thought